Space Nutrition

Volume 1 | Food For Thought | Issue #7

Mission Facts

We are at approximately Launch minus 80 days (L-80), now that the launch date has moved to July 19. During the month of April, the astronauts participating in the PhAB-4 experiments completed the L-90 data collection session. In this session, some of the astronauts collected samples of their urine for 2 days, and completed dietary monitoring for 4 days.

Career Facts

The Research Dietitian is responsible for collecting and analyzing all the dietary data associated with the STS-107 experiments. For the pre- and postflight studies, this includes preparing and measuring the amounts of foods, fluids, and any supplements consumed by the astronauts. The dietitian uses these data to figure out nutrient intake. Nutrient content of the pre- and postflight foods is calculated using special software, and nutrient content of the space foods is calculated using the results of chemical analyses. The Research Dietitian has a master's degree in nutrition and is a licensed and registered dietitian.

Intake of nutrients, such as calcium and protein, is very important when studying how the body adapts to spaceflight. Measuring dietary intake is not easy. During STS-107, astronauts will track all foods, beverages, medications, supplements, etc. used during all of the study sessions. This monitoring is done as part of 3 of the PhAB-4 experiments (Calcium Kinetics, Renal Stone Risk, and Protein Turnover) and for another study of changes in digestive function during spaceflight. On the ground, astronauts will collect these data for up to 5 days. While on orbit, they will collect data for up to 6 days during the 16-day flight.

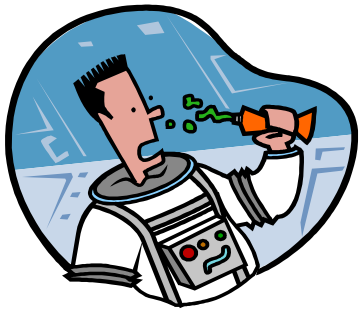
For study sessions on the ground, astronauts can choose either of 2 procedures for dietary intake monitoring:

- **They are given a scale and log book, which they take wherever they eat their foods. They weigh and/or measure everything they eat and drink, and write the amounts in their log books.**
- **They are given all the food and fluids that they will eat or drink during the data collection period. This food is prepared according to specific recipes, and each portion is carefully weighed and placed in individual containers. On the label of each food container, the astronauts record the time that each item is consumed.**

For the in-flight study sessions, astronauts use a barcode reader to scan a barcode label on every food package they consume. This barcode reader records the food name, the date, the time, and the portion of the package that was consumed.

Did you know?

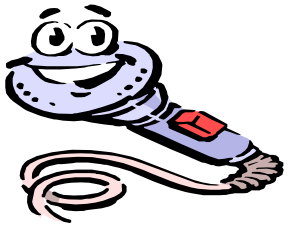
- The Research Dietitian works closely with the Principal Investigators to make sure that experiment requirements are met.
- Crewmembers will often save their food packages before and after flight to provide exact label information from store-bought foods.
- Simulations are sessions where the astronauts and experiment support personnel mimic (copy) flight protocols and conditions. In these simulations, the astronauts use flight hardware during sections of the mission schedule. Ground personnel complete their simulations in mission control.
- Though many latent viruses are harmless, they can cause serious diseases, like shingles and certain types of cancer, when they are reactivated. Even chicken pox can be quite serious in adults.



Word of the Month

Supplements

Can you guess what this word means? Look for the meaning of the "Word of the Month" in the next issue of Space Nutrition.



FUN CORNER

Find the Smart Science Word

Find the names of the PhAB-4 experiments. Rearrange these letters and place the names in alphabetical order below.

P	C	L	E	V	E
R	R	T	A	I	S
U	L	R	N	C	L
O	N	A	I	I	M

_ _ _ _ _ ◯ _
_ _ _ ◯ _ _ ◯
_ ◯ ◯ _ _
_ ◯ ◯ _ _

Next, rearrange the circled letters to find the Smart Science Word.

Do you know the Smart Science Word?

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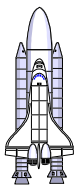
Check out these cool NASA links for more fun space science facts:

http://virtualastronaut.jsc.nasa.gov
http://lsda.jsc.nasa.gov
http://www.spaceflight.nasa.gov
http://education.jsc.nasa.gov



Check out the Nutritional Biochemistry Laboratory's website for more information about nutrition and space.

www.jsc.nasa.gov/sa/sd/facility/nutrition.htm